

Remarks/Arguments

The Office Action mailed October 3, 2008 has been reviewed and carefully considered.

Claims 1, 14 and 15 have been amended. Claim 18 has been added. Claim 2 remains canceled without prejudice. No new matter has been added. Claims 1 and 3-18 are now pending in this application.

Reconsideration of the above-identified application, as herein amended and in view of the following remarks, is respectfully requested. It should be noted that the Applicants are not conceding in this application that the amended claims in their prior form are not patentable over the art cited by the Examiner, as the present claim amendments have been made only to facilitate expeditious prosecution of the application. The Applicants respectfully reserve the right to pursue these and other claims in one or more continuations and/or divisional patent applications.

Rejections under 35 U.S.C. §102(e)

By the Office Action, claims 1 and 3, 7-11 and 17 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 7,014,521 to Fujike et al. (hereinafter 'Fujike').

Claim 1 recites:

A barrier laminate including barrier and planarisation materials for use with a device layer, comprising:

a device layer; and

at least one discontinuous layer of a planarisation material that is external to the device layer and corresponds to a stack including the device layer, wherein the at least one discontinuous layer is divided into unconnected areas distributed along a plane,

wherein the unconnected areas are separated by regions of a barrier material, and

wherein the barrier material separating the unconnected areas is external to the device layer and is resistant to at least one of water and oxygen permeability such that the device layer is protected against physical degradation and/or oxidation due to environmental elements.

In contrast to protecting a device from physical degradation and/or oxidation due to environmental conditions, it is respectfully submitted that Fujike is directed to an

entirely different problem of improving the properties of a color filter in a display panel. The black matrix (BM,2) of FIG. 17A in Fujike, which the Office Action purports anticipates the barrier material in claim 1, is a black resin material that separates colored pigments of pixels and is employed to improve display contrast (see, e.g., column 15, lines 5-8; column 1, lines 23-25). The black matrix is completely unrelated to protection of a device against physical degradation or oxidation. Furthermore, Fujike nowhere discloses or remotely suggests that the partitions separating different pigments of pixels are resistant to at least one of water and oxygen permeability. Accordingly, Fujike does not anticipate the feature of a barrier material separating the unconnected areas of planarization material that is resistant to at least one of water and oxygen permeability such that the device layer is protected against physical degradation and/or oxidation due to environmental elements, as recited in claim 1.

Thus, claim 1 is believed to be patentable over Fujike. Moreover, claims 3, 7-11 and 17 are believed to be patentable over Fujike due at least to their dependencies from claim 1. As such, withdrawal of the rejection is respectfully requested.

In addition, it should also be noted that Fujike does not anticipate or render obvious new claim 18. Claim 18 is dependent on claim 1 and recites: the device layer includes pixels and wherein the barrier material separating the unconnected areas in the discontinuous layer of planarisation material is above or below the device layer in the stack. As illustrated in FIG. 17A in Fujike, the function of the black matrix (2) is to separate pixels and improve display contrast within a color filter. Thus, the black matrix is within a layer of pixels. The black matrix is not above or below a layer including pixels within a stack. Accordingly, claim 18 is also believed to be patentable over Fujike.

Rejections under 35 U.S.C. §103(a)

By the Office Action, claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Fujike in view of U.S. Patent No. 6,265,309 to Gotoh et al. (hereinafter 'Gotoh').

Claim 4 is dependent from claim 1 and recites: wherein said planarisation material is a combination of organic and inorganic materials. Claim 4 is believed to be patentable due at least to its dependency from claim 1. In addition, there are others reasons for

which claim 4 is patentable over the cited references. For example, the Examiner acknowledges that Fujike fails to teach that the planarisation material, purported in the Office Action as being a solidified pigment (3) in FIG. 17A of Fujike, is a combination of organic and inorganic materials. To cure the deficiencies of Fujike, the Office Action cites Gotoh.

However, in contrast to the assertions posed in the Office Action, it is respectfully submitted that it would not be obvious to use a smoothing film as taught in Gotoh as a solidified pigment (3) for a pixel in a color filter disclosed in Fujike. Gotoh is completely unrelated to color filters. Rather, Gotoh is directed to a cleaning agent for semiconductor devices (see, e.g., Gotoh, Abstract). Although Gotoh mentions the use of an insulation film including organic and inorganic materials over a metal conductive line pattern in a semi-conductor device (see, e.g., Gotoh, column 8, lines 49-55; and column 9, lines 14-22), Gotoh and/of Fujike nowhere disclose or remotely suggest that the film is a suitable pigment for a pixel in a color filter.

Accordingly, claim 4 is not obvious in view of Gotoh and Fujike for at least the reasons discussed above. As such, withdrawal of the rejection is respectfully requested.

By the Office Action, claims 5, 12 and 13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fujike in view of U.S. Patent Publication No. 2002/0003403 (hereinafter Ghosh II). Respectfully, the Applicants disagree.

Claims 5, 12 and 13 are dependent from claim 1 and, as such, include the feature of a barrier material separating unconnected areas in a discontinuous layer of planarisation material is resistant to at least one of water and oxygen permeability such that the device layer is protected against physical degradation and/or oxidation due to environmental elements. As discussed above, the black matrix disclosed in Fujike in no way anticipates or renders obvious a barrier material that is resistant to at least one of water and oxygen permeability in the configuration recited in claim 1. Furthermore, Ghosh II fails to cure the deficiencies of Fujike.

Although, as noted by the Examiner, Ghosh II discloses the use of SiO₂ as a platform on which color filter may be laid in an OLED device, Ghosh II and Fujike, taken singly or in combination, do not disclose or render obvious that SiO₂ is a suitable material for a black matrix configuration or a partition separating different pigments of pixels

described in Fujike. As discussed above, the black matrix is a black resin material that is a light shield and is employed to improve display contrast between solid pigments of pixels (see, e.g., Fujike, FIG. 17A, column 15, lines 5-8; column 1, lines 23-25). Furthermore, Fujike is specifically directed to reducing irregularity in the height of solidified pigments deposited between the partitions (see, e.g., Fujike, column 2, lines 27-57). Given the typical surface irregularity of SiO₂, use of the material as a partition wall between pigments of pixels may hinder the ability of Fujike's system to control the height of the pigments, thereby subverting the entire principles of operation of Fujike. Accordingly, because neither reference discloses or remotely suggests that SiO₂ is suitable as a light shield used to improve display contrast between solidified pigments of different pixels or is suitable for use as a partition wall between pigments in a color filter in which the height of pigments is precisely controlled, it would not be obvious to employ SiO₂ as a black matrix configuration disclosed in Fujike. Thus, claims 5, 12 and 13 are believed to be patentable over Fujike and Ghosh II, taken singly or in combination.

By the Office Action, claim 6 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Fujike in view of U.S. Patent Publication No. 2001/0052752 (hereinafter Ghosh I).

Claim 6 is dependent from claim 1 and, as such, includes the feature of a barrier material separating unconnected areas in a discontinuous layer of planarisation material is resistant to at least one of water and oxygen permeability such that the device layer is protected against physical degradation and/or oxidation due to environmental elements. As discussed above, the black matrix disclosed in Fujike in no way anticipates or renders obvious a barrier material that is resistant to at least one of water and oxygen permeability in the configuration recited in claim 1. Furthermore, Ghosh I is directed to essentially the same film encapsulation as Ghosh II and does not recite any features in addition to Ghosh II. Accordingly, Ghosh I fails to cure the deficiencies of Fujike for at least the reasons discussed above with regard to Ghosh II. As such, claim 6 is believed to be patentable over Fujike and/or Ghosh I.

Rejections under 35 U.S.C. §102(b)

By the Office Action, claims 14-16 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,339,291 to Codama (hereinafter 'Codama').

Claim 14 recites:

A method for the manufacture of a discontinuous layer in a barrier laminate for use with a device layer that includes two opposing electrodes comprising:

- depositing a continuous layer of a planarisation material;
- removing regions of said layer of a planarisation material; and
- filling said regions with a barrier material to form a barrier laminate layer, wherein said regions are external to the device layer and correspond to a stack including the device layer such that the barrier material filling said regions is external to the device layer

Similarly, claim 15 recites:

A method for the manufacture of a discontinuous layer in a barrier laminate for use with a device layer that includes two opposing electrodes comprising:

- depositing a patterned layer of a planarisation material, whereby regions where no planarisation material is deposited are formed; and
- filling said regions with a barrier material to form a barrier laminate layer, wherein said regions are external to the device layer and correspond to a stack including the device layer such that the barrier material filling said regions is external to the device layer.

As stated in the Specification, aspects of the present principles are directed to protecting active layers of a display device from oxidation and/or physical degradation due to environmental elements (see, e.g., Specification, p. 1, lines 10-18, p. 2, lines 5-27; p. 3, lines 5-15; p. 4, lines 18-22, p. 5, lines 14-29; p. 6, line 31 to p. 7, line 5; p. 7, lines 27-28). In contrast to a barrier laminate used to protect active layers of a device, the material cited by the Office Action in support of the rejection of claims 14 and 15 is used in an intermediate processing step in production of display devices.

For example, in support of the rejection of claims 14 and 15, the Office Action cites FIG. 2E of Codama as anticipating the feature of filling regions between planarisation material with a barrier material such that the regions are external to a device layer (see, e.g., Office Action dated October 3, 2008, p. 4, para. 3 to p. 5, para. 1). With reference to FIG. 2E of Codama, the Office Action further purports that an insulating film (14) is a barrier material, a flattening film (12a) is planarisation material, and the device

layer is an ITO electrode (11) (see, e.g., Office Action dated October 3, 2008, p. 4, para. 3 to p. 5, para. 1). However, as described in Codama, the flattening film 12a and the insulating film between the flattening film is subsequently removed during production of the device (see, e.g., Codama, FIGS. 2F-2G; column 6, lines 60-67). The configuration in FIG. 2E is in no way whatsoever employed as a barrier laminate that protects active layers of a display device from environmental elements. Furthermore, the configuration in 2E does not anticipate or render obvious regions of barrier material between planarisation material that are external to a device layer including two opposing electrodes, as recited in claims 14 and 15. As shown in FIG. 2E, the intermediate processing configuration does not include any opposing electrode. Rather, an opposing electrode is applied after the removal of the insulating film (14) and the flattening film (12a) (see, e.g., column 8, lines 3-7).

Accordingly, Codama does not anticipate or render obvious claims 14 and 15 for at least the reasons discussed above. Moreover, Codama does not anticipate or render obvious claim 16 due at least to its dependency on claim 15. As such, withdrawal of the rejection is respectfully requested.

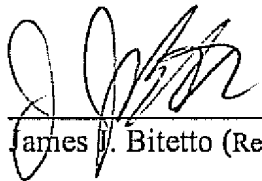
It should be noted that reference herein to “active layers” and “two opposing electrodes” are not limited to electroluminescent devices. For example, the references may also apply to other display devices, such as OLED devices and other devices. Furthermore, it should also be noted that the discussion above should not be construed to exclude equivalents to “two opposing electrodes” from the scope of the claims. As stated above, one or more aspects of the present principles are directed to prevention of degradation of active layers in a display device due to environmental conditions. Thus, equivalent active layers performing the display function of opposing electrodes and other components in active layers should not be construed as being excluded from the scope of the claims in light of the discussion provided above.

In view of the foregoing, the Applicants respectfully request that the rejections of the claims set forth in the Office Action of October 3, 2008 be withdrawn, that pending claims 1 and 3-18 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No. 14-1270.

Respectfully submitted,

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